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EXAMINER				
NICKERSON, JEFFREY L				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/816,217

**Applicant(s)**

MILLINGTON, NICHOLAS A. J.

**Examiner**

Jeffrey Nickerson

**Art Unit**

2442

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 577-600 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 577-600 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-942)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is in response to Application No. 10/816,217 filed on 01 April 2004 as a non-provisional of Application No. 60/490,768 filed on 28 July 2003. The response presented on 09 December 2010, which presents arguments, is hereby acknowledged. Claims 577-600 are currently pending and have been examined.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The phrase "media stream", found within claims 577, 590, and 600, fails to appear anywhere within applicant's specification. Correction is required.

### ***35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

### ***Response to Arguments***

4. Applicant's arguments, filed in the response dated 09 December 2010, with regard to the rejections under 35 USC 112 have been fully considered but they are not persuasive.

Independent claims 577, 590, and 600

Applicant argues there is sufficient enablement for the following limitations within the claim language:

*“the media stream comprising source-clock information related to a first independent clock associated with the source device and media data;” and*  
*“determining a time differential between the first independent clock associated with the source device and a second independent clock associated with a playback device; the time differential based on the source-clock information”*

Applicant's argument is based on the premise that the examiner incorrectly infers a limitation into the claim, specifically the limitation that the source-clock information and media data come from the same stream.

The examiner respectfully disagrees. As indicated above, the claim explicitly recites the media stream comprises source-clock information and media data. Furthermore, the citations provided by applicant with reference to the specification support the examiner's findings. The specification discloses a first stream, preferably multicast, that includes the audio information (the claimed media data, indicated in spec as AUD) and the playback timing information (currently unclaimed, indicated in spec as PBTIME\_INFO) (pg 15, line 22 - pg 16, line 17). Then the specification discloses a second separate stream, preferably unicast, that includes source clock information (the claimed source-clock information, identified in spec as AICD\_CLK\_INF) (pg 16, line 18 – pg 17, line 10). This second stream, preferably implemented via SNTP, provides source clock

information that is eventually used to determine the time differential of the clocks of the source and playback devices. Thus, the specification fails to provide enablement for the media stream to contain the source-clock information used in the claimed determining of the time differential.

Applicant's arguments are ultimately unpersuasive and, therefore, the rejections of these claims are hereby maintained.

Dependent claims 578-589, 591-599

Applicant argues these claims conditionally based upon the arguments presented for their parent claim(s).

Applicant's arguments are ultimately unpersuasive and, therefore, the rejections of these claims are hereby maintained.

*Claim Rejections*

5. Claims 577-600 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "a media stream comprising playback time information and media data", does not reasonably provide enablement for "a media stream comprising source-clock information .. and media data" when the claimed time differential is determined based on the source-clock information. The specification does not enable any person skilled in the art to which it pertains, or with which it is most

nearly connected, to make or use the invention commensurate in scope with these claims.

Regarding claims 577, 590, and 600, applicant's disclosure has been carefully examined to determine the scope of applicant's invention. The specification discloses a first stream, preferably multicast, that includes the audio information (indicated in spec as AUD) and the playback timing information (indicated in spec as PBTIME\_INFO) (pg 15, line 22 - pg 16, line 17). Then the specification discloses a second separate stream, preferably unicast, that includes source clock information (identified in spec as AICD\_CLK\_INF) (pg 16, line 18 – pg 17, line 10). This second stream, preferably implemented via Simple Network Time Protocol, provides source clock information that is eventually used to determine the time differential of the clocks of the source and playback devices (pg 17, lines 1-10). Thus, the specification fails to provide enablement for the media stream to contain the source-clock information used in the claimed determining of the time differential.

Regarding claims 578-589 and 591-599, these claims do not cure the deficiencies of their parent claim(s) and, therefore, inherit the rejection.

**35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*Response to Arguments*

7. Applicant's arguments, filed in the response dated 09 December 2010, with regard to the rejections under 35 USC 112 have been fully considered but they are not persuasive.

Independent claims 577, 590, and 600

Applicant argues the combined teachings of Goddard and Mills fails to render obvious at least one limitation within these claims. Specifically, applicant argues the combined teachings fail to render obvious the following:

*"a source device is configured to transmit a media stream, the media stream comprising media data and source-clock information related to a first independent clock associated with the source device".*

Applicant's argument is based on the premise that neither Goddard nor Mills discloses a stream with both source-clock information and media data.

The examiner respectfully disagrees. Goddard discloses a source device is configured to transmit a media stream, the media stream comprising media data and control information related to timing information of the source device (Goddard: col 4, lines 35-64 for sending command packets within audio streams, the command packets being used to determine an eventual time differential calculation). Mills teaches wherein the control information is source-clock information related to a first independent clock associated with the source device (Mills: section 2, pg 3, LHS, last paragraph). Thus, the combined teachings provide for the above-argued limitation.

Applicant further argues it would not be obvious to combine the teachings of Mills with that of Goddard. Applicant bases this argument on the premise that the examiner's statement of rationale for combining the teachings of Mills with Goddard is conclusory.

The examiner respectfully disagrees. The examiner provided sound rationale for combining Mills with that of Goddard. One of ordinary skill in the art would be motivated to utilize the teachings of Mills in the Goddard system in order to synchronize the clocks of the source and playback devices, via, for instance, a standardized clock synchronization protocol.

Applicant further argues the combined teachings would not result in the claimed technology. Applicant bases this argument on the premise that the resultant system would not, for instance, work when the playback devices are in separate rooms.



Applicant's allegations are conclusory, and the examiner does not agree such a resultant system would occur from the combination. Nor has applicant pointed to *claimed* subject matter that would be rendered inoperable from such a combination. Furthermore, there is no indication that using a standardized network clock synchronization protocol would suddenly render a networked system inoperable.

Applicant's arguments are ultimately unpersuasive and, therefore, the rejections of these claims are hereby maintained.

#### *Claim Rejections*

8. Claims 577, 586-587, 589-591, 594-595, 597-598, and 600 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2), and in further view of Mills ("Precision Synchronization of Computer Network Clocks", 1994).

Regarding claim 590, Goddard teaches a system for synchronizing media playback (Goddard: abstract), comprising:

a plurality of devices configured to be in communication via a network, the plurality of devices comprising a source device and one or more playback devices (Goddard: abstract; Figure 1);

wherein the source device is configured to transmit a media stream, the media stream comprising control information relating to timing information of the source device

and media data (Goddard: col 4, lines 35-64 for sending command packets within audio stream, the command packets being related to the eventual differential calculation);

wherein the source device determines a time differential between a first time value associated with the source device and one or more second time values associated with one or more playback devices (Goddard: col 4, lines 35-64 provides for determining time difference for each receiver), the time differential based on the control information (Goddard: col 4, lines 35-64 provides for time difference being obtained);

outputting the media stream media data via two or more playback devices in synchrony based on the time differential determined based on the control information (Goddard: col 4, lines 35-64 provides the playback devices adjust their playback times accordingly), the two or more playback devices being in synchrony when a user observing the outputting of the media stream is unable to perceive time-delay differences between the two or more playback devices (Goddard: abstract; col 1, lines 54-58).

Goddard does not teach wherein the control information is source-clock information related to a first independent clock associated with the source device;

wherein determining a time differential is between a first time value and one or more second time values comprising determining a time differential between a first independent clock and one or more second independent clocks; or

wherein the receiving device determines the timing differential.

Mills, in a similar field of endeavor, teaches wherein the control information is source-clock information related to a first independent clock associated with the source device (Mills: section 2, specifically pg 3, LHS, last paragraph); and

wherein determining a time differential is between a first time value and one or more second time values comprising determining a time differential between a first independent clock and one or more second independent clocks (Mills: pg 3, LHS; section 2.1, specifically pg 3 RHS, last paragraph to start of section 3); and

wherein the receiving devices determines the timing differential (Mills: pg 2, section 2, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Mills for having the clients pull clock information required for clock synchronization. The teachings of Mills, when implemented in the Goddard system, will allow one of ordinary skill in the art to have the playback devices pull NTP information from the source. One of ordinary skill in the art would be motivated to utilize the teachings of Mills in the Goddard system in order to synchronize the clocks of the source and playback devices by allowing the playback device to calculate the timing differential.

Regarding claim 591, the Goddard/Mills system teaches further comprising a user interface module configured to control one or more of the plurality of devices (Goddard: col 5, lines 31-55).

Regarding claim 594, the Benslimane/Mills system teaches wherein a clock rate of the one or more independent clocks associated with the one or more playback devices is adjustable (Mills: pg 3, LHS provides for adjustable frequency NCOs; See also section 2.1, paragraphs 1-3).

Regarding claim 595, the Goddard/Mills system teaches wherein the media stream comprises audio information (Goddard: abstract).

Regarding claim 597, the Goddard/Mills system teaches wherein the source-clock information comprises a timestamp (Mills: pg 2, RHS, last paragraph).

Regarding claim 598, the Goddard/Mills system teaches wherein one or more playback devices are operable with one or more of unicast transmission or multicast transmission (Goddard: col 1, lines 59-67).

Regarding claim 577, this method claim contains limitations found within that of claim 590 and the same rationale of rejection is used, where applicable.

Regarding claim 578, this method claim contains limitations found within that of claim 591 and the same rationale of rejection is used, where applicable.

Regarding claim 586, this method claim contains limitations found within that of claim 594 and the same rationale of rejection is used, where applicable.

Regarding claim 587, the Goddard/Mills system teaches wherein determining the time differential is performed periodically (Mills: pg 3 LHS, last paragraph; pg 3, LHS, last paragraph).

Regarding claim 589, the Goddard/Mills system teaches wherein receiving the media stream is performed by a multicast transmission methodology (Goddard: col 1, lines 59-67).

Regarding claim 600, this machine readable medium claim contains limitations found within that of claim 590 and the same rationale of rejection is used, where applicable.

9. Claims 580-583, 592, and 596 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994); and in further view of Benslimane ("A Multimedia Synchronization Protocol for Multicast Groups", 2000).

Regarding claim 592, the Goddard/Mills system does not teach wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony.

Benslimane, in a similar field of endeavor, teaches wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony (Benslimane: section 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Benslimane for enabling clients to join the multicast group without interrupting synchrony. The teachings of Benslimane, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to have new clients join a multicast group that is pulling clocking information from a source device. One of ordinary skill in the art would be motivated to utilize the teachings of Benslimane in the Goddard/Mills system in order to enable new users to join the playback group.

Regarding claim 596, the Goddard/Mills/Benslimane system teaches wherein the media stream comprises video information (Benslimane: abstract).

Regarding claim 580, this method claim contains limitations found within that of claim 592 and the same rationale of rejection is used, where applicable.

Regarding claim 581, the Goddard/Mills/Benslimane system teaches wherein the additional device replaces the source device as a new source device (Mills: pg 2, Figure

1 provides for nested multicast groups; Benslimane: section 4 provides for adding and leaving).

Regarding claim 582, the Goddard/Mills/Benslimane system teaches wherein the additional device joins the one or more playback devices as a new playback device (Benslimane: section 4 for adding and leaving).

Regarding claim 583, this method claim contains limitations found within that of claim 592 and the same rationale of rejection is used, where applicable.

10. Claims 578-579, 591, and 599 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2), in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994), and in further view of Official Notice.

Regarding claim 579, the Goddard/Mills system does not teach further comprising providing status information associated with one or more of the plurality of devices.

An official notice is taken that such use of providing status information for aid in awareness of controlled devices was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for providing status information.

These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to monitor the statuses of the playback devices with the source device. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to allow a user of the source device, such as presenter, identify when playback devices are not operating properly.

Regarding claim 588, the Goddard/Mills system does not teach wherein the transmission of the media stream is performed by a unicast transmission methodology.

An official notice is taken that such use of unicast for distribution of media information was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for using unicast. These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to target a specific playback device to send control information. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to allow a user of the source device, control the playback devices individually.

Regarding claim 599, the Goddard/Mills system teaches tightly coupled synchrony output of a media stream between devices (Goddard: col 1, lines 54-58).



The Goddard/Mills system does not teach wherein the source device is capable of playback.

An official notice is taken that such use of a source device for playback was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for enabling the source device to playback the audio as well. These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to have the source device act as a playback device. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to increase the devices capable of playing back the media and obtain more coverage area.

11. Claims 584 and 593 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994); and in further view Powers (US 2004/0203378 A1).

Regarding claim 593, the Goddard/Mills system teaches wherein a master device is a source device and a slave device is one or more playback devices (Goddard: Figure 3; col 4, lines 35-64).

The Goddard/Mills system does not teach wherein a master device is further configured to be converted into one of the one or more slave devices; or

and wherein at least one of the one or more slave devices is further configured to be converted into the master device.

Powers, in a similar field of endeavor, teach wherein a master device is further configured to be converted into one of the one or more slave devices (Powers: [0007] provides for masters handing off master-ship to a slave); or

and wherein at least one of the one or more slave devices is further configured to be converted into the master device (Powers: [0007] provides for a slave being promoted).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Powers for having promotion/demotion scheme for multicast groups. The teachings of Powers, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to promote playback devices to be the source device and demote source devices to mere playback devices. One of ordinary skill in the art would be motivated to utilize the teachings of Powers in the Goddard/Mills system in order to allow recovery if the source suddenly leaves the network, or the a playback device is deemed a more capable source device (more processing power, more content, etc).

Regarding claim 584, this method claim contains limitations found within that of claim 593 and the same rationale of rejection is used, where applicable.

12. Claim 585 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994) and Powers (US 2004/0203378 A1); and in further view of Benslimane ("A Multimedia Synchronization Protocol for Multicast Groups", 2000).

Regarding claim 585, the Goddard/Mills/Powers system fails to teach wherein the tightly coupled synchrony is uninterrupted.

Benslimane, in a similar field of endeavor, teaches wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony (Benslimane: section 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Benslimane for enabling clients to join the multicast group without interrupting synchrony. The teachings of Benslimane, when implemented in the Goddard/Mills/Powers system, will allow one of ordinary skill in the art to have new clients join a multicast group that is pulling clocking information from a source device. One of ordinary skill in the art would be motivated to utilize the teachings of Benslimane in the Goddard/Mills/Powers system in order to enable new users to join the playback group.

***Citation of Pertinent Prior Art***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Davis (US 2005/0188082 A1) discloses a system for synchronizing clocks between network devices.

***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Nickerson whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 9:00am - 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N./  
Examiner, Art Unit 2442

/KEVIN BATES/  
Primary Examiner, Art Unit 2456